Amendments to the Specification

Please replace paragraph [0027] with the following:

[0027] A common polymorphism in humans has been identified in the gene encoding the skeletal muscle protein, .alpha.-actinin 3 (ACTN3) that is only present in type 2 (fast) fibers. Three possible genotypes 577RR (wild type--expresses .alpha.-actinin-3), 577RX (heterozygous--.alpha.-actinin-3 present), and 577XX (homozygous null--no .alpha.-actinin-3 in skeletal muscle), have been identified. The allelic frequency varies in different ethnic groups (i.e. about 18% of Caucasians are .alpha.-actinin-3 deficient compared to .about.1% of African Zulus) (see Table 6 West Africans and African Americans). As discussed in the Examples below, in Caucasian elite sprint/power athletes, the frequency of the 577RR genotype is very low. Thus a screening procedure for ACTN3 577XX genotype, may provide assistance in identifying for example young Caucasian individuals with potential for elite performance in sprint or power-type sports and events. In contrast, in Caucasian elite endurance athletes, the frequency of the 577XX genotype is relatively higher. Thus a screening procedure for ACTN3 577XX genotype, may also provide assistance in identifying for example young Caucasian individuals with potential for elite performance in endurance sports and events. In addition, Table 6 illustrates the genotype and allele frequencies of ACTN3 577R/X alleles in different human populations. In Table 6 and Table 2, the negroid Africans (ie Zulus) screened have an extremely low number of 577 XX individuals. Thus, the screening of ACTN3 in negroid African populations (and, likely, the related West Africans and African-Americans) to detect 577XX genotypes may prove useful in identifying individuals with sprint/power potential. In one embodiment, a method for screening for an ACTN3 allele (e.g. 577R, 577X) alone or in combination with another screening methods

may be used to select, or at least assist in the selection of, young individuals with elite sprint/power potential (e.g. potential as track sprinters, short distance swimmers, and track cyclists).

Marked-up version show changes made to paragraph [0027]:

[0027] A common polymorphism in humans has been identified in the gene encoding the skeletal muscle protein, .alpha.-actinin 3 (ACTN3) that is only present in type 2 (fast) fibers. Three possible genotypes 577RR (~~wildtype~~ wild type--expresses .alpha.-actinin-3), 577RX (heterozygous--.alpha.-actinin-3 present), and 577XX (homozygous null--no .alpha.-actinin-3 in skeletal muscle), have been identified. The allelic frequency varies in different ethnic groups (i.e. about 18% of Caucasians are .alpha.-actinin-3 deficient compared to .about.1% of African Zulus) (see ~~Table 3~~ Table 6)~~WEST AFRICANS~~ West Africans and African Americans???). As discussed in the Examples below, in Caucasian elite sprint/power athletes, the frequency of the 577RR genotype is very low. Thus a screening procedure for ACTN3 577XX genotype, may provide assistance in identifying for example young Caucasian individuals with potential for elite performance in sprint or power-type sports and events. In contrast, in Caucasian elite endurance athletes, the frequency of the 577XX genotype is relatively higher. Thus a screening procedure for ACTN3 577XX genotype, may also provide assistance in identifying for example young Caucasian individuals with potential for elite performance in endurance sports and events. In addition, Table 6 illustrates the genotype and allele frequencies of ACTN3 577R/X alleles in different human populations. In Table 6 and Table 2, the negroid Africans (ie Zulus) screened have an extremely low number of 577 XX individuals. Thus, the screening of ACTN3 in negroid African populations (and, likely, the related West Africans and African-Americans) to detect

577XX genotypes may prove useful in identifying individuals with sprint/power potential. In one embodiment, a method for screening for an ACTN3 allele (e.g. 577R, 577X) alone or in combination with another screening methods may be used to select, or at least assist in the selection of, young individuals with elite sprint/power potential (e.g. potential as track sprinters, short distance swimmers, and track cyclists).

Please replace paragraph [0045] with the following paragraph:

[0045] In other exemplary embodiments, polymorphisms may be detected using a SNP-IT primer extension assay (Orchid Biosciences, Princeton, N.J.; e.g., U.S. Pat. Nos. 5,952,174 and 5,919,626). In this assay, SNPs are identified by using a specially synthesized DNA primer and a DNA polymerase to selectively extend the DNA chain by one base at the suspected SNP location. DNA in the region of interest is amplified and denatured. Polymerase reactions are then performed using microfluidic systems. Detection is accomplished by adding a label to the nucleotide suspected of being at the SNP or mutation location. Incorporation of the label into the DNA can be detected by any suitable method (e.g., if the nucleotide contains a biotin label, detection is via a fluorescently labelled antibody specific for biotin). Other commercial kits may be used to identify the presence or absence of one or more SNPs (e.g., Applied Biosystems: SNaPSOT, Assay-on-Demand, Assay-By-Design, Pyrosequencing assays.

Marked- up version show changes made to paragraph [0045]:

[0045] In other exemplary embodiments, polymorphisms may be detected using a SNP-IT primer extension assay (Orchid Biosciences, Princeton, N.J.; e.g., U.S. Pat. Nos. 5,952,174 and

5,919,626). In this assay, SNPs are identified by using a specially synthesized DNA primer and a DNA polymerase to selectively extend the DNA chain by one base at the suspected SNP location. DNA in the region of interest is amplified and denatured. Polymerase reactions are then performed using microfluidic systems. Detection is accomplished by adding a label to the nucleotide suspected of being at the SNP or mutation location. Incorporation of the label into the DNA can be detected by any suitable method (e.g., if the nucleotide contains a biotin label, detection is via a fluorescently labelled antibody specific for biotin). Other commercial kits may be used to identify the presence or absence of one or more SNPs (e.g., Applied Biosystems: SNaPSOT, Assay-on-Demand, Assay-By-Design, Pyrosequencing assays ~~(see: http://wwwpyrosequencing.com/pages/products96hs.html)~~.